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PRYOR MOUNTAIN WILD HORSE RANGE SURVEY AND ASSESSMENT

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ABSTRACT

The Pryor Mountain Wild Horse Range (PMWHR) was created in 1968 by a U.S. Department of the Interior Secretarial Order. This designation was the second of its kind in the United States, and directed that management of the wild horses be within a balanced program that considers all public values without any impairment to the land's productivity.

The PMWHR covers about 39,651 acres managed by the Bureau of Land Management (BLM), U.S. Forest Service (USFS), and the National Park Service (NPS). The area lies within two states, Montana and Wyoming. Due to widespread concern about the ability of the PMWHR to support wild ungulate populations, the BLM, as the lead management agency, asked the USDA-Natural Resources Conservation Service (NRCS) to conduct a comprehensive inventory and assessment of the health of the PMWHR and to determine what a sustainable number of horses would be.

The area is located approximately 47 miles south of Billings, Montana and nine miles north of Lovell, Wyoming. The PMWHR is extremely diverse and complex topographically, geologically, and ecologically. It varies in environment and elevation from a sagebrush / salt-shrub dominated cold desert (six inches MAP-mean annual precipitation) at about 3,850 feet in Wyoming, to a subalpine setting with subalpine fir (*Abies lasiocarpa*) and open meadows (27 inches MAP) in Montana at about 8,750 feet.

NRCS methodology was used to inventory rangeland condition (similarity index), rangeland trend, and health. Ecological sites were identified and mapped in 1981 and provided the baseline for the inventory (BLM and SCS 1981). Thirteen new ecological site descriptions were developed to adequately address the complex and unique nature of the PMWHR. Three transects per section were installed on average to evaluate similarity index, apparent ecological trend, species composition by weight, noxious weed cover, biological crust cover, plant community type, and available forage production. One rangeland health assessment, along with a one hundred-point cover transect, was done per section.

The similarity index averages about 30 percent across the entire PMWHR, apparent trend is down on 76 percent of the transects, severe erosion is occurring on approximately 57 percent of the landscape, and range health is functioning at a moderate to a moderate-extreme departure from the historic climax plant community.

As of 2003 the PMWHR supports 161 feral horses and 100 bighorn sheep year around, along with 350 mule deer during the winter months with most leaving before summer. Dietary overlap between feral horses and other large ungulates is considered minimal.

The present animal unit months (AUMs) of usable forage for feral horses was determined using geographical information system (GIS) and global positioning system (GPS) technology to determine slope classes used and to create grazability models based on travel distances to water. Grazability is the percentage of usable forage in an area allocated for use in order to maintain plant health. It is a relative term considering animals' grazing preference of areas including variables such as distance from water, ecological sites, slope steepness, aspect, and species preference. Slopes over 30 percent were essentially unused during the months of May through

November, while slopes over 50 percent were essentially unused during the months of December through April. Distances to water considered 100 percent grazable without overgrazing the forage resource were set at 1.5 miles in one model and three miles in another. Slopes over 30 percent were considered unused in one model and slopes over 50 percent were considered unused in another.

Based on the grazing scenarios modeled, feral horse carrying capacity varied from 45 horses (considering slopes > 30 percent were unused and distance to water with 100 percent grazability was 1.5 miles) to 142 horses (considering slopes > 50 percent were unused and distance to water with 100 percent grazability was three miles).

The following recommendations are made in light of the 1968 U.S. Department of Interior Secretarial Order creating the PMWHR, the Wild and Free-Roaming Horse and Burro Act of 1971, and the BLM national policy for the Wild Horse and Burro program. In short, these state that the wild horses should be managed as wild and free-roaming on the one hand, and on the other, managed without causing any impairment to the land's productivity. This is an apparent dilemma. Considering this and given the current downward trend, severe erosion, rangeland in the at risk to unhealthy categories, and the very low similarities of the vegetation to potential, the following recommendations are presented for consideration in order to improve the feral horse habitat conditions and reverse habitat deterioration:

1. Consideration could be given to repairing and utilizing the mid-mountain water catchments to provide improved distribution of feral horse grazing.

2. It is recommended that consideration be given to managing the herd within the range given (45 to 142 horses) in the "Results and Discussion" section based on the selected scenario.

3. Consideration could be given to controlling water sources in order to deny or permit access to water by feral horses. This would allow for growing season rest and reproduction of the forage plants, much in the same way that wildlife must be protected from disturbance in order to allow for reproduction and herd health. A type of buck and rail fence may be a possibility for control. This fence is more aesthetically pleasing and more fitting with the wilderness study area environment. In addition, it could provide for the passage of wildlife while controlling water access to feral horses.

4. A grazing rotation is recommended for consideration. Overgrazing is a problem and potentially, undergrazing could be a problem if grazing was eliminated. It could be designed to allow for vegetative recovery following grazing, and seasonality of grazing could be somewhat controlled. This would allow for the greatest range recovery for the benefit of the horses in the shortest period of time.

5. The previous considerations would also increase the noxious weed resistance of the range. Presently, noxious weeds are not a severe problem on the PMWHR, other than Halogeton (*Halogeton glomeratus*) in the areas receiving 10 inches MAP or less. However, the conditions are right for an explosion of noxious weeds.

6. If available, consideration could be given to expanding the range accessible to the feral horses. However, unless recommendations one through three are considered, it is very likely that the present grazing impacts would be extended to the newly acquired lands without improving the existing habitat.